



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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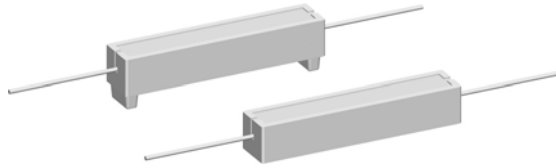
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# Wirewound/Metal Oxide Resistors, Commercial Power, Axial Lead



## FEATURES

- High performance for low cost
- High power to size ratio
- Ceramic cases are available with circuit board stand-offs (designated with a ...3 model ending)
- Special cement potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**ROHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

## STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{40\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE $\Omega$ WIREWOUND (1)	RESISTANCE RANGE $\Omega$ METAL OXIDE (1)	TOLERANCE $\pm$ %	WEIGHT (typical) g
CP0002	2	0.1 to 100	101 to 30K	5, 10	2.0
CP0003	3	0.1 to 100	101 to 33K	5, 10	3.4
CP0005	5	0.1 to 100	101 to 50K	5, 10	3.6
CP0005...3	5	0.1 to 100	101 to 50K	5, 10	4.8
CP0007	7	0.1 to 100	101 to 50K	5, 10	5.0
CP0007...3	7	0.1 to 100	101 to 50K	5, 10	6.8
CP0010	10	0.1 to 100	101 to 50K	5, 10	9.5
CP0010...3	10	0.1 to 100	101 to 50K	5, 10	9.9
CP0015	15	0.1 to 100	101 to 50K	5, 10	16.8
CP0020	20	0.1 to 100	101 to 50K	5, 10	22.8

## TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	WIREWOUND CHARACTERISTICS	METAL OXIDE CHARACTERISTICS
Temperature Coefficient	ppm/°C	$\pm$ 400	$\pm$ 400
Short Time Overload	-	5 x rated power for 5 s	5 x rated power for 5 s
Terminal Strength	lb	10 minimum	10 minimum
Operating Temperature Range	°C	-65 to +275	-65 to +225
Dielectric Withstanding Voltage	$V_{AC}$	1000	1000
Maximum Working Voltage	V	$(P \times R)^{1/2}$	$(P \times R)^{1/2}$

## GLOBAL PART NUMBER INFORMATION

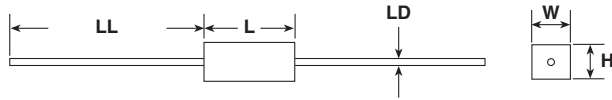
Global Part Numbering example: CP000515R00JE663

C P 0 0 0 5 1 5 R 0 0 J E 6 6 3

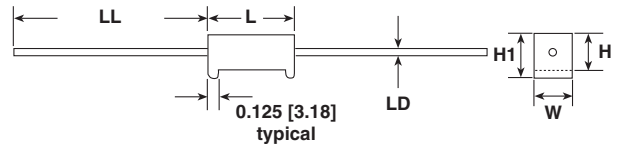
GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
(See Standard Electrical Specifications Global Model column for options)	R = Decimal K = Thousand R1500 = 0.15 $\Omega$ 1K500 = 1500 $\Omega$	J = $\pm$ 5.0 % K = $\pm$ 10.0 %	E66 = Lead (Pb)-free bulk pack	(Dash Number) (up to 3 digits) From 1 to 999 as applicable

**DIMENSIONS** in inches [millimeters]

CPxxxx



CPxxxx...3



GLOBAL MODEL	DIMENSIONS in inches [millimeters]					
	L <sup>(1)</sup> ± 0.060 [1.5]	W ± 0.040 [1.0]	H ± 0.040 [1.0]	H1 ± 0.060 [1.5]	LD ± 0.002 [0.05]	LL ± 0.120 [3.0]
CP0002	0.71 [18]	0.276 [7]	0.276 [7]	-	0.0256 [0.65]	1.378 [35]
CP0003	0.87 [22]	0.315 [8]	0.315 [8]	-	0.031 [0.8]	1.378 [35]
CP0005	0.87 [22]	0.394 [10]	0.354 [9]	-	0.031 [0.8]	1.378 [35]
CP0005...3	0.87 [22]	0.394 [10]	0.354 [9]	0.413 [10.5]	0.031 [0.8]	1.378 [35]
CP0007	1.38 [35]	0.394 [10]	0.354 [9]	-	0.031 [0.8]	1.378 [35]
CP0007...3	1.38 [35]	0.394 [10]	0.354 [9]	0.472 [12]	0.031 [0.8]	1.378 [35]
CP0010	1.89 [48]	0.394 [10]	0.354 [9]	-	0.031 [0.8]	1.378 [35]
CP0010...3	1.89 [48]	0.394 [10]	0.354 [9]	0.472 [12]	0.031 [0.8]	1.378 [35]
CP0015	1.89 [48]	0.492 [12.5]	0.453 [11.5]	-	0.031 [0.8]	1.378 [35]
CP0020	2.36 [60]	0.551 [14]	0.531 [13.5]	-	0.031 [0.8]	1.378 [35]

**Notes**

(1) Potting compound may extend outside of ceramic case up to 0.060 [1.52] maximum per side.

**MATERIAL SPECIFICATIONS**

**Element:** Wirewound = copper-nickel alloy or nickel-chrome alloy, depending on resistance value.  
Metal oxide = high temperature fired metal oxide film.

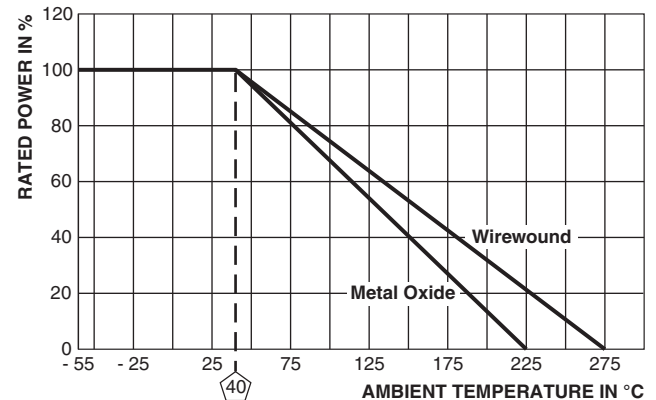
**Core:** Wirewound = ceramic  
Metal Oxide = ceramic

**Body:** Steatite ceramic case with inorganic potting compound

**End Caps:** Tin plated steel

**Terminals:** Tinned copper

**Part Marking:** DALE, model, wattage, value, tolerance, date code

**DERATING**


PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS (EIA-344)
Thermal Shock	-55 °C to +275 °C (+225 °C for Metal Oxide), 5 cycles, 30 min dwell time	± (5.0 % + 0.05 Ω) ΔR
Short Time Overload	5 x rated power for 5 s	± (4.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V <sub>RMS</sub> , for 1 min	± (2.0 % + 0.05 Ω) ΔR
Low Temperature Storage	-65 °C, full rated working voltage for 45 min	± (3.0 % + 0.05 Ω) ΔR
Humidity	75 °C, 90 % to 100 % RH, 240 h	± (5.0 % + 0.05 Ω) ΔR
Load Life	1000 h at rated power, + 25 °C, 1.5 h "ON", 0.5 h "OFF"	± (10.0 % + 0.05 Ω) ΔR
Terminal Strength	5 pounds for 30 s; body twisted about axis, 3 x 360° rotations	± (2.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder at 1/8" to 3/16" from body	± (4.0 % + 0.05 Ω) ΔR



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